Update

"Back To School Issue"

New Missouri Technology and Engineering listserv

Attention All Missouri TE professionals! The best resources Missouri technology and engineering professionals have to network with other professionals. The mo-tech-ed Discussion List is the best and quickest way to reach many Missouri teachers. It provides an opportunity to share ideas, receive information, and get answers to questions relating to technology and engineering education, its curriculum, and opportunities. MO-tech-ed is a monitored electronic discussion list with owner subscription approval required. To subscribe to this listserv go to
http://dese.mo.gov/divcareered/tech_ed_discussion_list.htm

MOREnet
mo-tech-ed

Project Lead The Way©

How to join *Project Lead The Way*©: All districts sign an agreement with Project Lead The Way. There are two types of agreements: District Agreement and an LEA Agreement. To read more about the agreement and related information go to http://www.pltw.org/joinpltw.shtml.

What is the cost involved to implement *Project Lead The Way*©: A break down of equipment and materials costs for each of the PLTW courses based are based on estimates and several assumptions that may not be true for your school. To read more about the details of implementation costs go to
http://www.pltw.org/costest.shtml.

What are the goals and benefits of a Nationally Certified *Project Lead The Way*© program: Under the PLTW/School Agreement signed by districts, all high schools must be certified by the second year in the program and re-certified every five years after. This process requires schools to demonstrate that they meet PLTW's quality standards in professional development of teachers and counselors; the implementation of curriculum using required equipment and software; the formation of a Partnership Team, and several others. To read more about the details of the National Certification benefits go to http://www.pltw.org/certifications.shtml.

How does end of course assessments and exit exams for all *Project Lead The Way*© courses: There are six reasons why the assessments are administered to all students enrolled in most PLTW courses in all schools in all states:
• To provide schools with a useful end-of-course assessment to assess student achievement;
• To provide a feedback mechanism on the areas of the courses which need to be strengthened during future revision of PLTW instructional materials;
• To ensure a common quality standard among all schools in the PLTW Network;
• To provide information for the School Certification program;
• To provide information for the Student Recognition Program;
• To provide information to the independent PLTW evaluation firm for the ongoing evaluation of the PLTW program
To read more about the details of the end of course assessments go to http://www.pltw.org/ecefaq.shtml.

How does the college credit for *Project Lead The Way©* courses work: The National Affiliate/PLTW Exemplary Student Recognition program will provide an opportunity for students in an National Affiliate/PLTW certified school who have excelled in selected PLTW courses to receive transcripted, college credit for Principles of Engineering, Introduction to Engineering Design, Digital Electronics, and Computer Integrated Manufacturing.

Not all National Affiliates offer credit in each course. Please see each National Affiliates' page or the Recognition and College Credit for PLTW Students for details at http://www.pltw.org/sturecprogram.shtml.

Is there information about *Project Lead The Way©* for my school counselors: PLTW is the only pre-engineering/engineering technology of its kind in the nation. It is presently offered in over 900 schools in 42 states and the District of Columbia and is affiliated with such groups as NASA, the Society of Manufacturing Engineers, American Society of Electrical Engineers, American Society of Manufacturing Engineers, and others. To read find more information for counselors go to http://www.pltw.org/counmessage.shtml.

Why should you be interested in *Project Lead The Way©*: Because we have developed a hands-on, project based approach to learning that better prepares students for the rigors of college. Our program incorporates math, science, English, and technology skills needed for success. Our professional development program will also help to improve your skills as a teacher and provide you with a class that students come to early, leave late and truly enjoy. To read more about teacher expectations go to http://www.pltw.org/teachermain.shtml.

What are the important dates to know about for *Project Lead The Way©*: The purpose of the Annual Calendar is to provide an easy reference to specific tasks that schools in the PLTW network and PLTW need to do together in a timely manner to best support teachers and students in the program. To view this information go to http://www.pltw.org/dates.shtml.

What is Missouri's growth with *Project Lead The Way©*: The first year there were 2 schools who joined the program and by the fall of 2006 there were 60 schools. We anticipate that this number will more than double by the fall of 2007.
(see chart to the right)

Project Lead The Way
Missouri Growth 2002-06+
Number of Schools
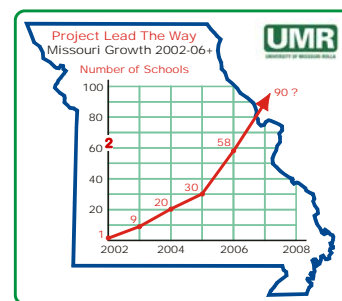
Curriculum

Exploring Career Clusters Curriculum — The curriculum provides an organized method for students to experience, through a hands-on authentic scenario, real-world occupations. Most importantly, Exploring Career Clusters provides a process for students to connect personal and educational requirements to real-world occupations. By giving students the opportunity to role-play authentic occupational tasks, they are exposed to many of the job skills and knowledge needed. This exposure helps to connect the formal training of schools subjects to the world of work throughout life. Click on the MCCE logo to the right to access more information.

Ready-to-Use Classroom Activities! — This series of activity guides is designed to supplement *Standards for Technological Literacy: Content for the Study of Technology* through the use of classroom activities. The activities are directly linked to recommended K-12 courses and present a variety of contemporary methods that infuse recent research concerning learning and teaching. Each of these activities provides detailed guidance for teacher preparation and implementation. They include ready-to-duplicate student handouts and reflection questions and provide multiple assessment strategies. There are 40 high school topics and 40 middle school topics to choose from. You can view and order your choice by go to https://www.iteaconnect.org/HitsKitsOnlineForm.html.

Awareness Campaigns for Technology — Technology is everywhere. Every time a child grabs an object and uses it as a tool—or tinkers with it to make it "work"—that is technology. From building fires and inventing the wheel to organizing systems to track medical records, people have done and continue to do many things to make their lives safer and happier. For more information go to http://www.iteaconnect.org/ACT/.

ITEA—CATTS (Center for Advancing the Teaching of Technology and Science —

The Center to Advance the Teaching of Technology & Science (CATTS) was established in 1998 to strengthen professional development and advance technological literacy. CATTS initiatives are directed toward four goals: development of standards-based curricula; teacher enhancement; research concerning teaching and learning; and curriculum implementation and diffusion.

Because Missouri was a CATTS Consortium member in the years shown on the web link below, the CATTS materials developed in those years are provided here for use in promoting technological literacy. These links are for your convenience and are not intended to be shared with others outside of Missouri. However, you may copy these resources to a CD or print them for dissemination to teachers and others within Missouri. For more information go to http://www.iteaconnect.org/H.html. If you are a Missouri Technology Education in then you can request the web address for the downloadable curriculum by sending and email request to W.Doug.Miller@dese.mo.gov.

Technology Education TSA National Curriculum: After several years of development and field-testing in technology classrooms, TECHKnow is now available. TECHKnow was written by, and for, Technology Teachers and their classroom. The TECHKnow Project consists of 20 units of study, carefully incorporating the Standards for Technological Literacy and all of the units correspond to TSA Competitive Events.

Ten units were developed for Middle School and 10 units for the High School level. One book containing 5 units for the Middle School, and one book containing 5 units for the High School, will be available for the 2004-2005 school year. The second book for each level will be available late summer of 2005. For more information go to http://www.cplearning.com/

Grants and Funding Opportunities

✺ **Toyota USA Foundation:** *Encouraging Education in Math and Science* has been working for over a decade to fund K-12 education programs, especially in the areas of mathematics and science. The foundation has formed partnerships with some of America's leading organizations and institutions and prefers proposals, which are broad in scope; incorporate interdisciplinary curriculum, "real world" classroom applications; are creative and innovative; develop the potential of students and teachers; and are cost-effective. Deadline for applications is open. Nonprofit 501(c)(3) organizations, institutions of higher education, community colleges and vocational or trade schools, and nonprofit organizations engaged in pre-college math or science are eligible to apply. Contact Foundation Administrator, Toyota USA Foundation, 9 West 57th Street, Suite 4900, New York, NY 10019, (212) 715-7486. You may also visit the website at http://www.toyota.com/foundation.

✺ **Learn and Serve America** School-Based grants is to involve young people between the ages five and seventeen in service-learning projects that simultaneously support student development and meet community needs in areas such as the environment, education, public safety, and other human needs (see application instructions for a complete list of Service Categories). For more information, contact Scott Richardson, LSAschool@cns.gov, phone: (202) 606-7510, web site: http://www.learnandserve.gov/for_organizations/funding/apply.asp.

✺ **AIAA** provides grants **to assist educators in presenting mathematics, science, and technology principles** to students (K-12) in an exciting, hands-on manner to develop our future aeronautics and aerospace engineers, scientists, pilots, and space explorers. Awards of up to $200 per teacher are available, with each school limited to up to $1,000 per calendar year. Visit http://www.aiaa.org/content.cfm?pageid=216 for information.

✳ Do you know a **teacher who needs funding to implement an engineering program or project** with his or her students? IEEE-USA's Pre-college Education Committee's Pre-college Teacher Grant Program awards small grants to teachers to sponsor innovation and creativity in or outside of the classroom. The grants will be available beginning in January 2006 and provide funding up to a maximum of $1,500 to recognize novel ideas that introduce engineering to students. For a sneak preview, visit <<http://www.ieeeusa.org/volunteers/committees/pec/>>. The process for applying for a grant and other requirements will be posted later in December.

✳ **Aerospace Education Foundation (AEF)** Educator Grant program is designed to promote **aerospace education activities in classrooms from kindergarten through twelfth grades**. The program encourages development of innovative aerospace activities within the prescribed curriculum. The program also encourages establishing an active relationship between the school and the local Air Force Association organization. Visit <http://www.aef.org/aid/educator.pdf> for information.

✳ **Boeing Company Education Grant** Education is a priority for The Boeing Company. Education receives the largest portion of their charitable contributions, with 40 to 45 percent targeted to support elementary, secondary and higher education. Boeing works in partnership with schools, colleges and universities to **support high academic standards and prepare students for further education and tomorrow's workplace**. They support public schools in communities where Boeing employees live and work. Eligible Grade Levels: Elementary, Middle, and High. Preference is limited to the communities in which Boeing has an office. Public schools are eligible to apply. Applicable Subjects: Technology, Reading, Professional Development, Mathematics, Language Arts, Sciences.
<http://www.renlearn.com/fundingcenter/grantsearch/details.asp?c=1195403&g=467>

✳ **The Lowe's Charitable & Educational Foundation** is dedicated to improving the communities we serve through support of public education, community improvement projects and home safety initiatives. K-12 public school projects can include: **Construction and Trades related education initiatives; clean-up, landscaping and painting projects; playground enhancements; and minor repair/renovation of public school buildings**. Lowe's provides funding only to 501(c) (3) tax-exempt nonprofit organizations and public agencies in communities where Lowe's operates stores and distribution centers. Visit <http://www.lowes.com/lowes/lkn?action=pg&p=AboutLowes/Community> for information.

✳ **Citigroup Foundation Grant** seeks to **improve educational opportunities in low-income communities** that will better prepare the next generation for life-long learning and the workforce. In early childhood and primary and secondary education, grants support early literacy development, technology-based curriculum resources, and career and college preparation programs. The Foundation provides grants for teacher training and innovative teaching strategies that increase student achievement. Eligible Grade Levels: Elementary, Middle, and High. Grants are limited to locations where Citigroup has a major presence. Please contact them for a list of these locations. Public schools are eligible to apply. Applicable Subjects: Technology, Reading, Professional Development, Mathematics, Language Arts, Social Studies, Sciences.
<http://www.renlearn.com/fundingcenter/grantsearch/details.asp?c=1362928&g=377>

Missouri School Improvement Program Resources

   Common Standards for Career Education Programs — developed by the Division of Career Education the six common standards are: Program Management and Planning, Curriculum, Instruction, Professional development, Career and Technical Student Organizations, and Instructional Facilities and Equipment.

   These standards, along with the quality indicators, were designed to provide guidance and direction to local school districts in establishing, improving, and evaluating career education programs.

During the development of the Common Standards, input was provided by teachers and administrators. This input was critical to ensure that the Common Standards were reflective of what represents exemplary career education programs across the state. To view and/or download more information about the common standards go to http://dese.mo.gov/divcareered/common_program_standards.htm.

More Career Education MSIP Resources can be found at http://dese.mo.gov/divcareered/msip.htm.

Missouri TSA

The Benefits for Students — TSA uses several methods to help students with personal development. They are the leadership development program, competitive events, achievement program, and a national service project. Everyone is encouraged to participate in leadership development, skill development, and community service.

Leadership Development Program: Such vital areas as public speaking, chapter team competition, group dynamics, and cooperation with others are all essential parts of the TSA program. In addition, the TSA member has the opportunity to take part in local, district, state, and national leadership conferences which offer the opportunity to improve on personal excellence. TSA believes students should provide leadership in activities, which affect their school, community, work, and nation.

Competitive Events: TSA members compete in a variety of technology categories ranging from Aerospace Technology to Technical Research and Report Writing. There are two levels of competition for grades 6-12. Level I is for 6th through 9th grade and Level II is for 9th through 12th grade. During the awards ceremonies, the top ten finalists in each event are recognized on the platform, and TSA awards the winners in each event with a first, second, and third place recognition.

Technology Achievement Program: The achievement program is a self-initiated program designed to motivate students in their technology education programs and to be recognized for their efforts in leadership development, school/community service, understanding of technology, and career/personal planning. It is composed of three levels: bronze, silver, and gold. The first level of bronze is achieved at the local level, the second level of silver is achieved at the state level, and the third level of gold is achieved at the national level. Points are accumulated through a variety of projects and activities.

CommunityService Project: TSA is proud to be a part of this worthwhile enterprise. TSA chapter activities are an integral part of the school technology education program and provides added dimension to school/community activities. TSA activities enhance the instructor's means of creating technology related challenges that benefit the student. TSA increases the opportunity for individual growth and participation in an environment.

9th Annual Missouri Connections Conference — The theme for this year is *"One Step At A Time".* The 9th Annual Missouri TSA Fall Leadership Connections Conference, October 12-14, 2006, Truman Hotel and Conference Center of Jefferson City, MO promises to be fun and exciting. The State Officer team has been hard at work planning an excellent experience for you this year! You will want to make plans now to be a part of this rewarding event.

The benefits of bringing your chapter officers to this conference will provide your student leaders the opportunity to develop their leadership skills and network with other students from across the state. For more information about Missouri Connections Conference go to: http://dese.mo.gov/divcareered/tsa_fall_leadership_conference.htm.

TSA Chapter Affiliation Forms and Dues — You can find the chapter affiliation form to register your chapter for the 2006-2007 school year at http://dese.mo.gov/divcareered/tsa_membership_information.htm.

TSA Program of Work Calendar — To view and/or download a printable copy of the 2006-2007 calendar go to http://dese.mo.gov/divcareered/tsa_calendar.htm

Resources and Information

Office Classroom Tools from Microsoft — Download these tools that are designed to help teachers, students, and administrators integrate Microsoft Office into everyday instruction, learning, and classroom management. For more information go to http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=634A9212-8162-4485-996E-6E525EB4A369.

Thoughts for Consideration,

All of the interesting facts listed below came from *Did you Know?* website at http://www.didyouknow.org/

Did you know that nothing happened 3 and 13 of September 1752! In September 1752 the Julian calendar was replaced with the Gregorian calendar in Great Britain and its American colonies. The Julian calendar was 11 days behind the Gregorian calendar, so 14 September got to follow 2 September on the day of the change. The result was that between 3 and 13 September, absolutely nothing happened!

The calendar switch also influenced the way George Washington's birthday is celebrated. He was born on 11 February 1731, but the anniversary of his birth is on 22 February because of the 11 days eliminated from the calendar switch. At the same time, New Year's Day was changed from 25 March to 1 January, thus according to the new calendar, Washington was born in 1732.

Why does water not calm the tongue after eating hot spicy food? The spices in most of the hot foods that we eat are oily, and, like your elementary school science teacher taught you, oil and water don't mix. In this case, the water just rolls over the oily spices. What can you do to calm your aching tongue? Eat bread. The bread will absorb the oily spices. A second solution is to drink milk. Milk contains a substance called "casein" which will bind to the spices and carry them away. Alcohol also dissolves oily spices.

Invention Facts:

☞ The can opener was invented 48 years after cans were introduced.

☞ Traffic lights were used before the advent of the motorcar.

☞ Leonardo da Vinci never built the inventions he designed.

☞ In 1889, Kansas undertaker Almon B. Strowger wanted to prevent telephone operators from advising his rivals of the death of local citizens. So he invented the automatic exchange.

☞ The first vending machine was invented by Hero of Alexandria around 215 BC. When a coin was dropped into a slot, its weight would pull a cork out of a spigot and the machine would dispense a trickle of water.

☞ For 3000 years, until 1883, hemp was the world's largest agricultural crop, from which the majority of fabric, soap, paper, medicines, and oils were produced.

☞ George Washington and Thomas Jefferson both grew hemp. Ben Franklin owned a mill that made hemp paper. The US Declaration of Independence was written on hemp paper.

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TE Update is an electronic newsletter for Missouri Technology Education Professionals A copy can be downloaded by going to: http://dese.mo.gov/divcareered/teched_news.htm

To receive this newsletter send an email request to W.Doug.Miller@dese.mo.gov http://dese.mo.gov/divcareered/tech_ed_index.htm